Firmware Release Notes Survey

Date: June 9th, 2015

Product: SP80

Subject: New SP80 Firmware Release

Version: 1.5

Introduction:

This document is the firmware release note of the SP80 V1.5.

This version is a maintenance release which resolves one issue.

Upgrade procedure

The customers can upgrade the receiver with the version V1.3 by following this procedure:

1- Copy the file sp80_upgrade_v1.5.tar to a SD Card (its size must be at least 256Mbytes, and it is preferable to use an empty and recently formatted SD Card)
2- Switch off the SP80
3- Plug the SP80 into an external power and make sure that there is also an internal battery
4- Insert SD Card to the SP80
5- Turn on the SP80 while keeping pressed the button 'Scroll' (during about 5 seconds)
6- Wait for the complete upgrade (it should take about 10 minutes)

Firmware list and versions

General version number: V1.5 – 29/05/2015

OS: 2.6.37 #711 PREEMPT 16/05/2014
PVT: LP60V39
DSP: LC60V39
SL: 0.54
BT: 7.2.31
PMU: 3.W
GSM: 02.003
XDL: V01.06(2) or V01.08(2) or V01.12(2)

The software compatible with SP80 V1.5 are:

- FAST Survey: 4.0.7 or 4.1.11 or 4.2.16
- RINEX Converter:
- Survey Pro: 5.5.1
- Survey Office (32-bits): 2.96
- Survey Office (64-bits): 3.30
- USB Serial Emulation: 1.1

New features

This version does not contain any new feature.

Resolved Problems

Reset due to satellite BEIDOU #31: the recently launched satellite #31 may reset the GNSS firmware. This problem may stop all the periodic output and so the field software does not receive any more the solution. This problem is now resolved

Known issues

1. **Geofencing**: the geofencing is implemented in this version but when the receiver is working outside the allowed zone, it reboots permanently as soon as it tracks satellites
2. **Options**: the options related to GNSS tracking are implemented but sometimes they are not taken into account properly when one of them is disabled or enabled. It is recommended to keep all the options set during manufacturing.
3. **Anti-theft**: when anti-theft mode is on and the customer removes the battery without turning off the receiver with the button, sometimes the modem is not automatically turned on when starting again the receiver so the email or SMS are not sent. But the receiver is still in antitheft mode so it can't be used without entering the password.
4. **Reset 3 buttons**: the reset 3 buttons deletes all the G-Files recorded in the internal memory

Recommendations

1. **Beta version**: the official version contains 2 numbers (ex: 1.2). If the receiver contains a version with 3 digits (ex: 1.2.5), it means that it is a beta release and this beta release can used only 90 days after the release date. After 90 days, the receiver will not answer to any command, and the only thing to do is to upgrade the receiver with an official version.
2. **SD Card**: the receiver supports the standard SD Card and the SDHC card up to 32Gb. It does not support the SDXC.
3. **Ionosphere activity**: Today we at the peak of ionosphere activity which can affect/degrade receiver performance. User must realize that often 3rd party reference data provider is equally responsible for performance degradation because of generating much less correcting data compared to quiet

ionosphere conditions. User is recommended also contacting Network data provider in case of RTK problems.

4. **ATL log**: We recommend end user in case of receiver performance problem to record atl.log and share it with Tech Support. W/o atl.log file, the ability to help end user will be much less.
5. **6 GNSS**: While SP80 can work with different subsets of GNSS (e.g. GLO only, BDS only, GLO+BDS), user must realize that exclusion of any available GNSS system may result in degraded positioning performance
6. **6 GNSS**: While SP80 can track and use the observables from all 6 GNSS, for differential (RTK rover) operation it can be possible only if base provides respective reference data. Today with RTCM-3.1 protocols these reference data can be available only for L1/L2 GPS and GLONASS, so SP80 cannot take a benefit of other signals. Only the following 2 cases can allow effective RTK usage of all tracking signals:
   - Using own SP80 base generating either ATOM or RTCM-3.2 (MSM) differential data
   - Using 3rd party services supporting RTCM-3.2 (MSM) data generation
7. **NTRIP:** When working with Ntrip service, user is recommended to select VRS mount point over MAC and FKP. In general with wide variety of different mount points, always try select GPS+GLONASS points.

Rescue procedure

If the receiver is in a state where it reboots continuously and it contains the U-Boot (BL2) 1.28, then the rescue procedure (see below) can be used to repair the receiver. The U-Boot 1.28 exists since the version 1.3. If an upgrade into 1.3 has been tried but failed, it is possible that the receiver contains the U-Boot 1.28 so the rescue procedure can be tried.

The rescue procedure is the following:

1. Unpack the files sp80_rescue1.bin, sp80_rescue2.bin, sp80_rescue3.bin into the empty SD-Card (use root folder, no subfolders). The SD Card size must be at least 256Mbytes.
2. Insert the SD-Card into the SP80
3. Power on the SP80 with pressing the scroll button (Key combination as for regular upgrade start)
4. Observe progress on the SP80 display. After procedure done the SP80 will be powered OFF automatically
5. Collect file rescue.log from SD-Card. It contains diagnostics what was restored during the rescue procedure
6. Remove the SD-Card and power on the SP80

Once this process is done, you must perform a normal upgrade with the file sp80_upgrade_v1.5.tar even if the version 1.3 is displayed on the screen of the SP80.